

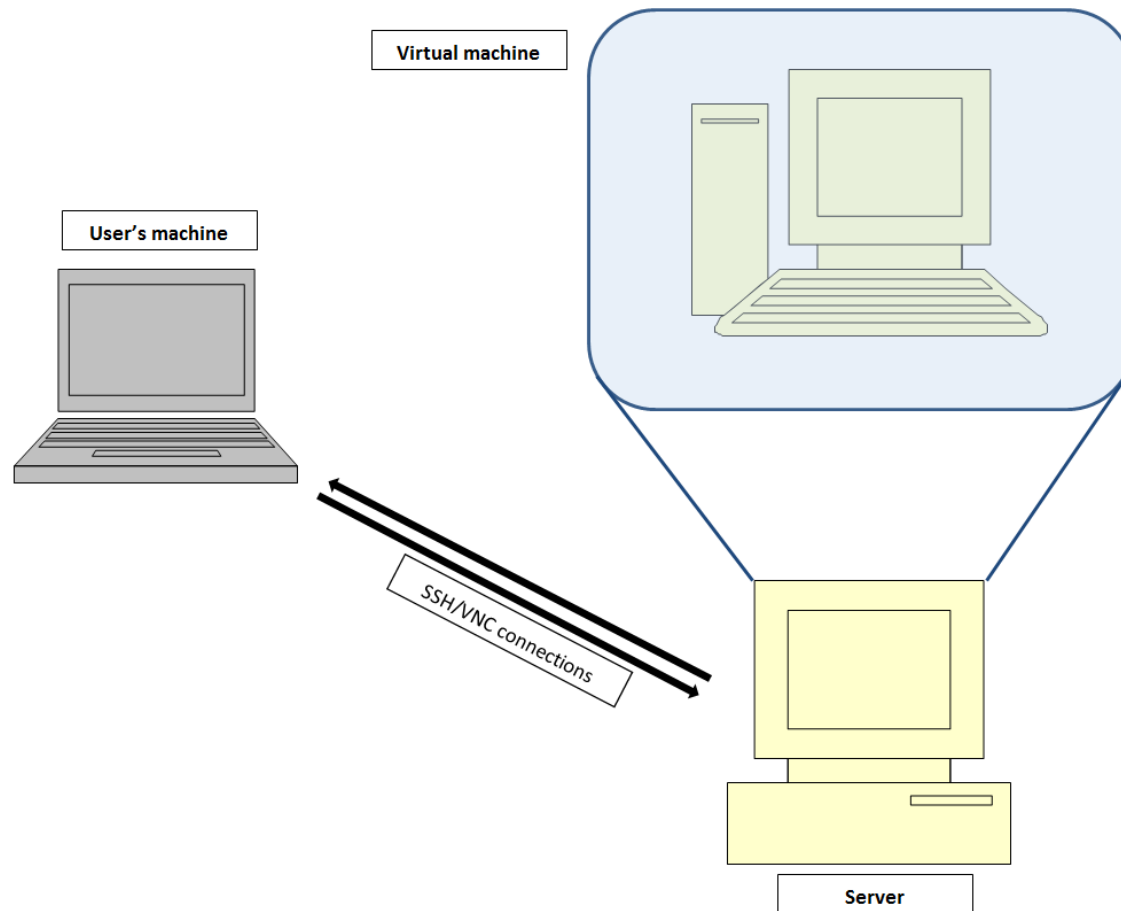
The Bioinformatics Lab SS2011

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Virtualization with KVM/QEMU

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The Task: Set up virtual machine on Server



1. Creating the virtual machine

- Connect to server

```
ssh -X hoehn@i12r-studfilesrv.informatik.tu-muenchen.de
```

- KVM/QEMU already installed on server machine
- Create virtual machine image

```
kvm-img create -f qcow2 image.qcow2 2G
```

- ✓ qcow2 format
- ✓ Size 2 gigabytes

- Get the Debian stable installation image

```
wget http://.../debian-6.0.1a-amd64-businesscard.iso
```

1. Creating the virtual machine

- Boot the virtual machine for installation

```
kvm  
  
-hda image.qcow2  
-cdrom debian-6.0.1a-amd64-businesscard.iso  
-boot d  
-m 512  
-net nic,model=virtio  
-net vde,sock=/var/run/kvm0ctl
```

2. Installing Debian stable on virtual machine

- Similar to first lecture, with following exceptions:
 - No swap partition, no boot partition
 - No graphical desktop environment
 - Make only partition bootable
 - Install Grub bootloader to the master boot record
- After finishing installation restart virtual machine

```
kvm  
-hda image.qcow2  
-m 512  
-net nic,model=virtio  
-net vde,sock=/var/run/kvm0ctl
```

2. Configure Debian installation

- Change user id from 1000 to 1006
 - Edit */etc/passwd* and */etc/shadow*
- Configure static IP address
 - Edit */etc/network/interface*

Old <i>/etc/network/interface</i>	New <i>/etc/network/interface</i>
iface eth0 inet DHCP	iface eth0 inet static address 192.168.16.5 netmask 255.255.255.0 gateway 192.168.16.1

- Restart network: `/etc/init.d/networking restart`

2. Accessing the virtual machine from outside

- First shell script: Start virtual machine with SDL Display
→ X-forwarded window

```
#!/bin/sh
kvm
-hda image.qcow2
-m 512
-net,model=virtio,
-net,vde,sock=/var/run/kvm0ctl
```

2. Accessing the virtual machine from outside

- Second shell script: start virtual machine in VNC mode

```
#!/bin/sh
nohup

kvm
-hda image.qcow2
-m 512
-net,model=virtio,
-net,vde,sock=/var/run/kvm0ctl
-chardev
socket,id=monitor,path=tbl2011.monitor,server,nowait
-mon chardev=monitor,mode=readline
-vnc none

>/dev/null 2>&1 &
```

2. Accessing the virtual machine from outside

- Specify VNC port from the hypervisor

- Access the monitor

```
nc -U tbl2001.monitor
```

- Set VNC port

```
change vnc:20
```

- Redirect VNC port to local client machine

```
ssh -L 5920:127.0.0.1:5920 hoehn@i12r-  
studfilesrv.informatik.tu-muenchen.de
```

- Start VNC Viewer ➔ enjoy virtual machine ;)

```
vncviewer 127.0.0.1:5920
```